2011

Nebraska Summary: S802 Case-IH Puma 215

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SUMMARY OF OECD TEST 2638–NEBRASKA SUMMARY 802
CASE IH PUMA 215 DIESEL
19 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP *(kW)*	Crank shaft speed rpm	Gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—1162 rpm)					
191.6 *(142.9)*	2200	10.29 *(38.95)*	0.373 *(0.227)*	18.62 *(3.67)*	
Standard Power Take-off Speed (1000 rpm)					
209.2 *(156.0)*	1893	10.75 *(40.69)*	0.357 *(0.217)*	19.46 *(3.83)*	
Maximum Power (1 hour)					
210.4 *(156.9)*	1800	10.57 *(40.01)*	0.349 *(0.212)*	19.91 *(3.92)*	
VARYING POWER AND FUEL CONSUMPTION					
191.6 *(142.9)*	2200	10.29 *(38.95)*	0.373 *(0.227)*	18.62 *(3.67)*	Air temperature
167.9 *(125.2)*	2265	9.22 *(34.90)*	0.382 *(0.232)*	18.21 *(3.59)*	77°F *(25°C)*
127.1 *(94.8)*	2289	7.51 *(28.43)*	0.410 *(0.249)*	16.93 *(3.33)*	Relative humidity
85.2 *(63.5)*	2300	6.03 *(22.82)*	0.492 *(0.299)*	14.12 *(2.78)*	40%
42.9 *(32.0)*	2313	4.03 *(15.26)*	0.652 *(0.396)*	10.64 *(2.10)*	Barometer
-- --	2330	2.78 *(10.53)*	-- --	-- --	29.3" Hg *(99.3 kPa)*

Maximum Torque - 688.3 lb.-ft. *(923.1 Nm)* at 1500 rpm
Maximum Torque rise - 48.8%
Torque rise at 1800 engine rpm - 34%

DRAWBAR PERFORMANCE
(Unballasted - Front Drive Engaged)
FUEL CONSUMPTION CHARACTERISTICS

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp.°F *(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Power—10th Gear									
171.1 *(127.6)*	11730 *(52.17)*	5.47 *(8.81)*	2100	5.5	0.430 *(0.262)*	16.22 *(3.20)*	176 *(80)*	46 *(8)*	29.6 *(100.2)*
75% of Pull at Maximum Power—10th Gear									
133.7 *(99.7)*	8865 *(39.44)*	5.66 *(9.10)*	2130	4.0	0.462 *(0.281)*	15.08 *(2.97)*	176 *(80)*	46 *(8)*	29.6 *(100.2)*
50% of Pull at Maximum Power—10th Gear									
92.2 *(68.8)*	5890 *(26.20)*	5.87 *(9.45)*	2155	2.0	0.508 *(0.309)*	13.71 *(2.70)*	178 *(81)*	46 *(8)*	29.6 *(100.2)*
75% of Pull at Reduced Engine Speed—11th Gear									
140.4 *(104.7)*	8890 *(39.54)*	5.92 *(9.54)*	1880	3.8	0.430 *(0.262)*	16.19 *(3.19)*	179 *(82)*	46 *(8)*	29.6 *(100.2)*
50% of Pull at Reduced Engine Speed—11th Gear									
90.5 *(67.5)*	5865 *(26.1)*	5.79 *(9.31)*	1805	2.0	0.472 *(0.287)*	14.77 *(2.91)*	179 *(82)*	46 *(8)*	29.6 *(100.2)*

Location of tests: HBLFA Francisco Josephinum BLT Biomass-Logistics-Technology, Rottenhauser, Strasse, 1, AT, 3250, Wieselburg, Austria

Dates of tests: October, 2010 to May, 2011.

Manufacturer: CNH UK Limited Basildon, Essex SS14 3AD United Kingdom

FUEL and OIL: Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F *(15°/15°C)*** 0.837 **Fuel weight** 6.97 lbs/gal *(0.835 kg/l)* **Oil SAE** 10W30 **API service classification** CG-4 **Transmission and hydraulic lubricant** Akcela Nexplore fluid **Front axle lubricant** Akcela Nexplore fluid

ENGINE: Make F.P.T. Diesel **Type** six cylinder vertical with turbocharger and air to air intercooler and D.E.F.(diesel exhaust fluid) exhaust treatment. **Serial No.** 518516 **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** 4.094" x 5.197" *(104.0 mm x 132.0 mm)* **Compression ratio** 17.0 to 1 **Displacement** 410 cu in *(6728 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** two paper canisters **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** thermostat and variable speed fan

CHASSIS: Type front wheel assist **Serial No.** ZABS08007 **Tread width** rear 60.2" *(1530 mm)* to 87.8" *(2230 mm)* front 61.4" *(1560 mm)* to 89.0" *(2260 mm)* **Wheelbase** 113.5" (*2884 mm)* **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with full range operator controlled powershift **Nominal travel speeds mph *(km/h)*** first 1.17 *(1.89)* second 1.40 *(2.25)* third 1.68 *(2.71)* fourth 2.01 *(3.24)* fifth 2.39 *(3.85)* sixth 2.86 *(4.60)* seventh 3.40 *(5.47)* eighth 4.06 *(6.54)* ninth 4.88 *(7.86)* tenth 5.83 *(9.39)* eleventh 6.95 *(11.18)* twelfth 8.30 *(13.35)* thirteenth 9.82 (*15.80)* fourteenth 11.74 *(18.89)* fifteenth 14.11 *(22.70)* sixteenth 16.86 *(27.13)* seventeenth 20.06 *(32.29)* eighteenth 25.10 *(40.39)* nineteenth 26.10 *(42.00)* (electronically limited) reverse 2.59 *(4.17)*, 3.10 *(4.99)*, 3.73 *(6.00)*, 4.45 *(7.16)*, 5.30 *(8.53)*, 6.33 *(10.18)* **Clutch** multiple wet disc electro-hydraulically operated by foot pedal **Brakes** wet disc hydraulically operated by two foot pedals that can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 1950 engine rpm or 1000 rpm at 1893 engine rpm **Unladen tractor mass** 17880 lb *(8110 kg)*

DRAWBAR PERFORMANCE

(Unballasted - Front Drive Engaged)
MAXIMUM POWER IN SELECTED GEARS

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp.°F*(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
					8th Gear				
154.4 *(115.1)*	16335 *(72.67)*	3.54 *(5.70)*	2100	14.3	0.460 *(0.280)*	15.13 *(2.98)*	183 *(84)*	46 *(8)*	29.6 *(100.1)*
					9th Gear				
171.4 *(127.8)*	16145 *(71.82)*	3.98 *(6.41)*	1930	13.9	0.438 *(0.266)*	15.90 *(3.13)*	183 *(84)*	46 *(8)*	29.5 *(100.0)*
					10th Gear				
176.9 *(131.9)*	14370 *(63.92)*	4.62 *(7.43)*	1800	7.0	0.425 *(0.258)*	16.40 *(3.23)*	178 *(81)*	45 *(7)*	29.5 *(100.0)*
					11th Gear				
181.7 *(135.5)*	12240 *(54.44)*	5.57 *(8.96)*	1800	5.3	0.412 *(0.251)*	16.93 *(3.34)*	179 *(82)*	46 *(8)*	29.5 *(100.0)*
					12th Gear				
178.9 *(133.4)*	9955 *(44.28)*	6.74 *(10.84)*	1800	4.2	0.422 *(0.257)*	16.50 *(3.25)*	176 *(80)*	46 *(8)*	29.5 *(100.0)*
					13th Gear				
185.9 *(138.6)*	8680 *(38.60)*	8.03 *(12.92)*	1800	3.7	0.406 *(0.247)*	17.16 *(3.38)*	169 *(76)*	46 *(8)*	29.5 *(100.0)*
					14th Gear				
184.8 *(137.8)*	7155 *(31.83)*	9.68 *(15.58)*	1800	3.2	0.407 *(0.248)*	17.11 *(3.37)*	176 *(80)*	46 *(8)*	29.5 *(100.0)*

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD test procedures. This tractor did not meet the manufacturer's implement pump flow claims of 32 GPM *(121 lpm)* with standard system nor 35 GPM *(135 lpm)* with high flow option. This tractor did not meet the manufacturer's 3 point lift claims of 10200 lbs *(4626 kg)* with 90 mm lift cylinders nor13400 lbs *(6078 kg)* with 100 mm lift cylinders. The performance figures on this summary were taken from a test conducted under the OECD Code 2 test procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **2638** Nebraska Summary 802, January 26, 2012.

Roger M. Hoy
Director

M.F. Kocher
D.R. Keshwani
P.J. Jasa
Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive Disengaged dB(A)	Engaged dB(A)
At no load in 9th gear	68.0	68.0
Bystander	--	--

TIRES, BALLAST AND WEIGHT	Tested without ballast
Rear Tires - No., size, ply & psi*(kPa)*	Two 710/70R38;**;14*(100)*
Front Tires - No., size, ply & psi*(kPa)*	Two 600/65R28;**;14*(100)*
Height of Drawbar	19.7 in *(500 mm)*
Static Weight with operator - Rear	10815 lb *(4905 kg)*
- Front	7230 lb *(3280 kg)*
- Total	18045 lb *(8185 kg)*

This vehicle is equipped with an electronically controlled engine Power management system that monitors and boosts engine power output in certain circumstances. This is achieved by electronically changing the characteristics of the engine power-speed curve. The engine Power management function ("boosted" power level) becomes active in the higher transmission gears (16th and above) and for road transport applications. The system is also activated when power transfer through the PTO and hydraulic pump exceeds a preset level (and forward speed exceeds 0.5 km/h), for mobile PTO driven implement applications. An overide system is provided to enable PTO operations at the "boosted" power level while the vehicle is stationary for test purposes. The results of this PTO output test are presented below.

POWER TAKE-OFF PERFORMANCE

Power HP *(kW)*	Crank shaft speed rpm	Gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—1162 rpm)					
221.3 *(165.0)*	2200	11.15 *(42.22)*	0.349 *(0.212)*	19.85 *(3.91)*	
Standard Power Take-off Speed - (1000 rpm)					
236.7 *(176.5)*	1893	12.04 *(45.56)*	0.352 *(0.214)*	19.66 *(3.87)*	
Maximum Power (1 hour)					
237.2 *(176.9)*	1800	12.01 *(45.47)*	0.350 *(0.213)*	19.75 *(3.89)*	
VARYING POWER AND FUEL CONSUMPTION					
221.3 *(165.0)*	2200	11.15 *(42.22)*	0.349 *(0.212)*	19.85 *(3.91)*	Air temperature
192.4 *(143.5)*	2250	10.28 *(38.91)*	0.370 *(0.225)*	18.73 *(3.69)*	70°F *(21°C)*
146.2 *(109.0)*	2280	8.38 *(31.73)*	0.421 *(0.242)*	17.45 *(3.44)*	Relative humidity
98.3 *(73.3)*	2298	6.49 *(24.56)*	0.398 *(0.278)*	15.15 *(2.98)*	45%
49.5 *(36.9)*	2314	4.41 *(16.70)*	0.616 *(0.375)*	11.22 *(2.21)*	Barometer
-- --	2330	2.40 *(9.10)*	-- --	-- --	29.2"Hg *(99.0 kPa)*

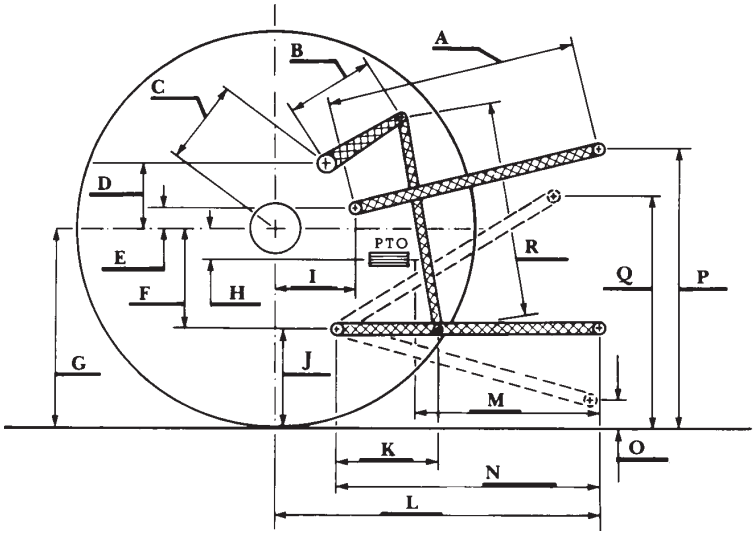
Maximum Torque 770.1 lb.-ft. *(1044.2 Nm)* at 1500 rpm
Maximum Torque Rise - 45.8%
Torque rise at 1800 rpm - 31%

HYDRAULIC PERFORMANCE

CATEGORY: III
Quick Attach: No
OECD Static test

Lift cylinders:	2 x 90 mm	2 x 100 mm
Maximum force exerted through whole range:	9465 lbs *(42.1 kN)*	12500 lbs *(55.6 kN)*

	Standard pump - 32 gpm	High flow pump - 35 gpm
i) Sustained pressure at compensator cutoff:	2975 psi *(205 bar)*	2830 psi *(195 bar)*
	two outlet sets combined	
ii) Pump delivery rate at minimum pressure:	29.6 GPM *(112.0 l/min)*	33.5 GPM *(127.0 l/min)*
iii) Pump delivery rate at maximum hydraulic power:	26.2 GPM *(99.1 l/min)*	27.1 GPM *(102.5 l/min)*
Delivery pressure:	2685 psi *(185 bar)*	2465 psi *(170 bar)*
Power:	41.0 HP *(30.6 kW)*	38.9 HP *(29.0 kW)*
	single outlet set	
ii) Pump delivery rate at minimum pressure:	26.2 GPM *(99.1 l/min)*	30.3 GPM *(114.7 l/min)*
iii) Pump delivery rate at maximum hydraulic power:	24.3 GPM *(91.8 l/min)*	24.3 GPM *(92.0 l/min)*
Delivery pressure:	2465 psi *(170 bar)*	2320 psi *(160 bar)*
Power:	34.9HP *(26.0 kW)*	32.9 HP *(24.5 kW)*



HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	*mm*
A	32.3	*820*
B	15.0	*380*
C	15.1	*383*
D	14.6	*372*
E	10.8	*275*
F	10.6	*270*
G	36.4	*925*
H	2.4	*60*
I	17.7	*450*
J	25.8	*655*
K	26.9	*682*
L	48.2	*1224*
M	23.1	*587*
N	38.3	*974*
O	9.0	*230*
P	52.8	*1340*
Q	40.2	*1020*
R	38.4	*975*